THE REFUGE

ENABLING TRANSFORMATIVE HEALING AND EDUCATIONAL ADVANCEMENT THROUGH THE INTEGRATION OF URBAN AGRICULTURAL TECHNIQUES IN DETROIT LAKES, MN

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NORTH DAKOTA STATE UNIVERSITY
UNDERGRAD THESIS // SPRING 2017

THE REFUGE

Enabling Transformative Healing and Educational Advancements through the Integration of Urban Agricultural Techniques in Detroit Lakes, MN

A Design Thesis Submitted to the
Department of Architecture and
Landscape Architecture
of North Dakota State University

By

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in Partial Fulfillment of the
Requirements for the Degree of
Bachelor of Landscape Architecture

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may 2017 // fargo, nd

The following thesis project, entitled THE REFUGE: Enabling Transformative Healing and Educational Advancements through the Integration of Urban Agricultural Techniques, was composed over the course of the 2016-2017 academic school year. The Thesis Program, as contained here, was initiated and completed in the fall semester as a part of the LA 563: Programming and Thesis Preparation course. Supplemental material, including the Thesis Boards and the Thesis Presentation documents, were generated in the spring semester as a part of the LA 572: Design Thesis studio. Any inconsistencies between the different documents, in terms of research and design, should be disregarded per the evolution of the project across the two semesters.

figure .01

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ABSTRACT

Current urban agriculture is comprised of a variety of typologies and each are applied in site specific ways thus creating a vast web of possibilities when trying to implement the ideology of urban farming into a new location. My thesis hinges on the assumption that urban agriculture is currently working to lessen the monetary burden of produce on the caretakers of the urban gardens. Not only can urban farming techniques lessen the monetary burden of produce they can also teach owners self-sustainability, give them a sense of ownership, and better the local ecosystems and the planet by minimizing the amount of inputs a carrot (or any vegetable, fruit, grain, nut, etc.) needs to go from seed to table. The application of a new adaptation of various urban agriculture typologies in a suburban/urban area of Detroit Lakes, Minnesota will present the opportunity for a multitudinous amount of benefits to be reaped by the owners, facilitators, users, community, and human kind at large.

figure.04

THESIS NARRATIVE

There is a large push in society for sustainability and being more conscious about our ecological footprints as citizens. Shutting off the lights when you leave the room, recycling more of the products we use, partaking in technology that utilizes more sustainable energy methods like solar chargers, cfl light bulbs, and electric cars are many of the main stream ideas thrown at each of us to implement in our lives in order to better the planet and make sure the earth will still be around and healthy for our children's children. Another primary lifestyle change being promoted along with these other carbon saving activities is food sourcing and food consumption. Specifically striving to be more self-sustaining in our production and consumption patterns; ultimately trying to limit the gap between food producer and food consumer to such an extent as to morph the two titles into a single person.

Our food comes from all different places all over the globe is transported into the United States and across the county to get to us – wherever that may be. A shift towards locally sourced fresh foods is growing in popularity and continually transforming to fit various geographical conditions. Therefore, the field of urban agriculture contains many different typologies. By studying precedents that currently utilize various urban agriculture typologies and selecting certain typologies based on their success in similar conditions and set-ups as well as morphing typologies together to essentially create new farming typologies I would be able to create a proposal for

a self-sustaining landscape.

This self-sustaining landscape that utilizes many urban farming typologies would aim to solve the issue of gap between producer and consumer and give new purpose for underutilized urban and suburban land. The site and clients chosen to implement my thesis design ideology belong to a Christian non-profit organization in Detroit Lakes, Minnesota. The Refuge House serves as a transitional resource for those battling addictions, unfortunate circumstances, or lack of basic necessities for supporting themselves. The Refuge House strives to instill faith and love into their residents and teach them basic skills – aiding in them achieving GEDs or taking steps toward college entrance – and more advanced skills that will help residents hold jobs in the future – a step towards becoming more autonomous in their lives.

With residents needing to learn skills that will enable them to better care for themselves and make a life for themselves in the future I felt that this would be a wonderful opportunity to apply my thesis in a local area that would benefit the immediate community. Utilizing this site also enables me to 'test' out a design and an application of my thesis in the harshest of climates thus making the idea easily replicated in a variety of other geographical areas. Although I do validate that there are a number of different skills that the residents of The Refuge House could spend their time learning, I do feel that caring for and producing their own produce is a lifelong skill that has the potential to save each of them a large amount of money and, if applied in specific ways, could also become a platform for potential profits beyond their own consumption.

As typologies are morphed and adapted in different ways to make the urban farming technologies applicable in The Refuge House site and format I will employ an evaluative research methodology to aid in considering which aspects of each typology would correlate to the geographical area and usability to the client. Evaluative research will enable me to make informed decisions on which attributes of each typology to mimic and further enhance in my overall interpretation of urban farming; this also requires me to find plenty of precedent cases that I can thus evaluate for their success and usability. The case studies and evaluative research can then be applied to my inventory and analysis of the site along

with the clients' requests that will define a project program (list of necessary elements and features of the landscape installation) and lead to a process of design research. The design methodology will be faced in a typical manner relative to the design field with repetitive iterations of program elements in different spatial arrangements until the 'best' application of all the features is reached.

WEEK ONE

gather information and communicate ideas to primary and secondary advisors

WEEK TWO-THREE

continue to apply evaluative research to newfound precedents and pull ideas. develop 4-7 concepts.

WEEK FOUR

narrow concepts to one. further develop concept with accurate spatial necessities

WEEK FIVE

concept to autocad

WEEK SIX

finish up concept to autocad linework and translate into sketchup

WEEK SEVEN

utilize sketchup for topographic elements and building facade and basic design

WEEK EIGHT

create inventory and analysis graphics for final boards

WEEK NINE-TEN

develop details of main components of design

WEEK ELEVEN

finalize details of main design components and begin secondary component details

WEEK TWELVE

utilize program to define main views and important components that need to be displayed on final boards

WEEK THIRTEEN

work on layout of boards. develop text that aids in communication of ideas.

WEEK FOURTEEN-FIFTEEN

produce renderings of details and large perspective/section views of design

WEEK SIXTEEN

finalize layout and print

RESEARCH PAPER

INTRODUCTION:

As civilizations have grown and developed, definitive lines between urban, suburban, and rural have emerged. Each of these sectors interacts with the other two, however, operates as an individual entity in some regards as well. As urban city centers sprawl rural farmland is being displaced and discarded leaving citizens with places to live, shop, work, play, and drive; space is not left over for people to sustain their lives, to actually be self-sufficient, nor to produce some or all of their needs for sustenance. Less active farmland producing a variety of needed crops leads to dependence on grocery stores, transportation of such resources from the rural land in adjacent or cross continental cities, and labor of those willing and able to produce the food. The reintroduction of basic food production within the urban core and suburban sprawl of a city aims to lessen the disconnect between food consumer and food producer: pointedly to lessen the disconnect so far as to make the consumer and producer into the same person.

Urban gardens, urban agriculture, edible landscapes, community garden plots, and agriscaping all have commonalities that span over multiple related disciplines and each create enormous benefits for the investors, caretakers (producers), and benefactors (consumers) of the typologies. However, each also has a distinction that creates a niche and superior purpose for utilizing the specific typology. This paper aims to theorize that each of these typologies can be a unique entity and system in itself, yet, incorporating each of the ideas and evaluating them on a holistic scale can yield greater benefits than if each were a stand-alone unit. Therefore, the combined utilization of urban agricultural techniques paired with the understanding of the potential benefits of each singularly and holistically creates the ability to develop an intricate layering of the various typologies in an urban or suburban setting to promote localized, sustainable production of high demand foods and close the gap between producer and consumer.

PERSONAL HEALTH:

Cutting out processing and transportation of produce enables end consumers to gain higher nutrient intake from the consumption of their foods. As mentioned, the closer the consumer is to the producer – ideally the same individual – the greater the benefits; in the case of personal health, increased benefits would include fresher produce, higher nutrient density, variety in the diet, and the increased ability and desire to try new foods to name a few. The small scale urban garden or individual community garden plot are typologies that strongly promote the benefits of individual health in regards to nutrients, freshness, and fruit and vegetable consumption.

The Community Food Service Security Coalition's North American Initiative on Urban Agriculture published an article highlighting many of these benefits in relation to urban agriculture specifically stating that vegetables are relatively easy to grow, therefore, producing the ability to supplement the least represented veggie intake category in most people's diet: leafy greens (Smit, Bellows, Brown 2003). With the knowledge that leafy greens are resilient plants that are easily grown, urban 'farmers' have access to what possibly would be undesirable produce, yet make it part of their daily diet based on the ease of access and production. This concept is especially true with youth as they may not have been exposed to trying all varieties of fruits and vegetables and have the adventurous disposition of being open to trying new things and gaining new experiences (Ober Allen, Alaimo, Elam, Perry 2008). Urban agriculture can open up new possibilities and create ease of access to many products consumers already utilize or would be more willing to utilize.

Physical heath is also a component of maintaining an urban agricultural plot or backyard edible landscape. Wellness benefits seem to be cited as varied among young and old, men and women, and those with and without diseases, however, all results agree upon at least some increase in health benefits in regard to general wellness (Smit, Bellows, Brown 2003); reduced stress, reduced heart rate, increased mobility, increased stamina, decreased recovery time (from illness), and more all provide a baseline generalization that the benefits of the upkeep of a garden or agricultural plot go well beyond the harvest and can actually delve deeper into the individual and community as well.

OWNERSHIP/PURPOSE:

Humans have a desire to be a part of something, to have something to depend on, and to be depended upon. That cyclical relationship gives humans purpose and place; a reason to wake up in the morning; a reason to do better and give more. Owning and caring for a garden creates the sense of dependency that humans thrive for; the garden is dependent on its caretaker for nourishment and vitality. Children may understand this idea more significantly than adults as they are constantly cared for and depend on parents or guardians; through observation of elders they learn quite early the innate yearning for something to depend on them. The study of community gardening in Flint, Michigan published by Ober Allen, Alaimo, Elam & Perry gathers insightful quotations from youth participants in the community programs stating how they feel to be a part of the community and that they feel ownership and pride of living in and caring for their city after having been introduced to caring for and benefiting from the community garden plots established in their neighborhoods (2008). The adolescents from the studies also explained the process of dependence the plantings had on them: the need for ritualized

care and a watchful eye; this dependence gave the youth of the community purpose and place in their neighborhoods requiring of them to input time and energy into the community and thus reaping the benefits of community bonds and the products of agricultural cultivation.

REDUCED DEPENDENCE

Although humans thrive on dependence as mentioned and elaborated on previously, in order to cultivate growth within an individual reduced dependence on others must occur eventually. Autonomy and self-efficacy are two important traits that successful individuals exemplify. Having the capacity to make the change from personally depending on the industrialized rural farming techniques to cultivating an adequate amount of produce in an individualized setting of an urban garden or urban agricultural plot or a suburban edible landscape that utilizes agriscaping principles fosters internal growth. The autonomy of self-sufficiency also promotes sustainable practices of land utilization, waste management, and reduction of harmful environmental by products of conventional agricultural processes.

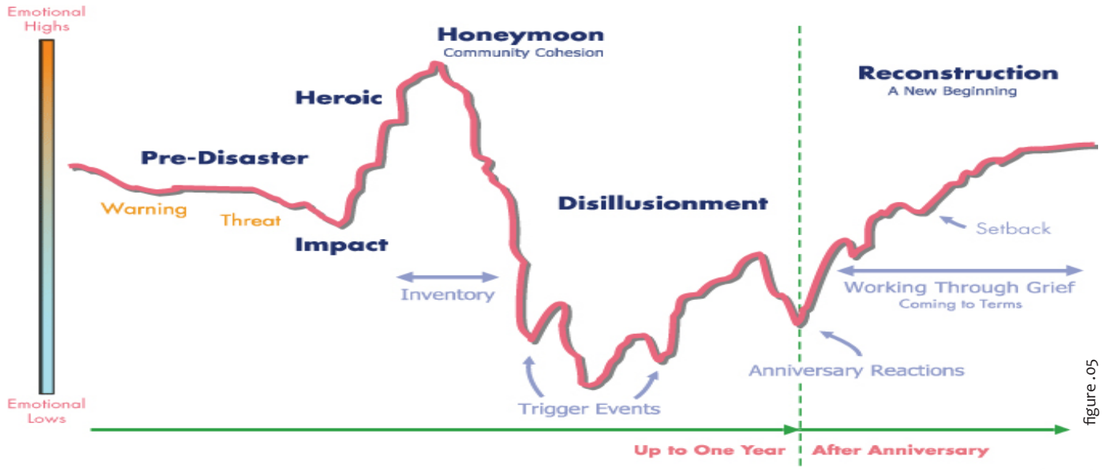


figure . 05

DELAYED GRATIFICATION

Farmers in current industrialized farming methodology make their livelihood and spend their time waiting for the return on investment of time, capital, and resources that ease the livelihood of the general society whom depend on farmers to produce the goods in demand. In many cases, this is all people have ever known – this is how they grew up and the process by which to acquire food they learned from youth. “The industrialization and globalization of agriculture and the segregation of the vast majority from a relationship to their food production did not just happen by default,” present humanity was raised to believe that driving to a grocery store to purchase industrially produced products is the natural process of gaining access to food (Condon, Mullinix, Fallick, Harcourt 2010 p.112). Get in the car, go to the grocery store, buy the foods that have been trucked from all corners of the country into the local area, drive the foods home, utilize more resources to aid in cleaning, preserving, and or cooking the foods in order to eat them.

This frightening reality of convenience, impatience, and avoidance of labor is a direct correlation to society’s dependence on technology. The instant gratification humans can now receive by being indefinitely ‘plugged in’ to the grid has quickly dictated the lifestyle society lives in; not only has the trend of instant gratification infiltrated our demands for technologically advanced products, it has spread to the roots of human existence as well. Humans began as hunter gatherers required to put in the effort to obtain the foods that they needed, now society has displaced that task onto the few – the industrialized farmers – who are asked to support the entirety of individuals that lack the patience for delayed gratification.

HEALING

Caring for, watching, and utilizing the fruits of labor is inherently satisfying for humans. This subsurface level interaction with individual urban agricultural plots, or through the ideologies of agriscaping in a backyard setting can be invaluably therapeutic to the producers and caretakers of these typologies. This beneficial relationship can be that much more important for someone who is aiming to overcome a struggle – be it emotional, physical, or mental. Utilizing different methodologies to promote healing and create a sense of schedule and normalcy for someone who is overcoming a struggle is invaluable in their road to recovery and future successes. More research may be needed to solidify this concept in the context of a potential application of urban agriculture for healing benefits to personal health.

COST SAVINGS:

Monetary value of time is quite difficult to determine. How much time is it worth to turn fallow ground in preparation for planting, to constantly tend to and care for vulnerable plants, to then harvest, prep, and store the yields, and furthermore to continue to maintain the space needed for planting throughout the rest of the year? Although one may not be able to concretely determine the value of time spent on caring for plantings the reward and value comes when the producer/consumer is able to articulate how much would have been spent on those same products sourced from another local market or grocer. Research cited from Smit, Bellows, and Brown stated that for each dollar invested in caring for and cultivating community garden plots, six dollars is returned to the investor (2003). That would include the cost of time (if deemed measurable – possibly from opportunity cost analysis), materials, and other inputs. That amount of savings over purchasing similar items in a grocery store and the possible profits, even, can go a long way in benefiting the investor and producer in future endeavors be them related or unrelated to urban agriculture.

WASTE REDUCTION & UTILIZATION:

As mentioned in previous sections, by an individual playing the role of a consumer so far removed from the process of production an immense amount of waste and costs are interjected into the final product. Wastes and unwanted byproducts such as travel time, fuel and greenhouse gas emissions, air pollution, noise pollution, increased vehicular traffic, and labor costs are highly associated with purchasing products that are not produced locally (Bohn & Viljoen 2011). Furthermore, wastes such as byproducts of society's day to day life and systems cause a burden on the production of foods. Smit and Nasr propose that urban agriculture is a key component in the possible reduction of waste through the transition from a consume-dispose mentality to a consume-process-reuse mentality of recycling and re-utilizing the byproducts of our systems (1992). Recycling programs for common metals and plastics are already established in much of the United States and other developed countries, however, there is a lack of establishment and federal guidelines for the reuse of gray water and organic matter that have a large possible presence in the

sustainable cultivation of crops in an urban agricultural setting.

GRAY WATER

Gray water has a stigma of being unsanitary, unclean, and unusable. Through filtration and treatment processes, gray water can be utilized to the same degree as freshwater, yet federal regulations still inhibit these actions. Smit and Nasr cite cultural reasons why some countries and/or concentrations of certain cultures shy away from accepting gray water into agriculture (1992). However, with the water crisis that the globe is currently in, each and every possible solution should be explored and attempted to be adapted into common practice in order to benefit the environment in the long run. Large scale industrialized farming could largely benefit from the use of gray water as well as the small scale urban typologies that implement agriscaping ideologies or urban garden plots. Being able to essentially reuse water is a strong sustainable action that reduces production costs and aids in the protection of the earth's environmental resources.

ORGANIC MATTER/ COMPOSTING

Beyond the need for water, plantings thrive on rich soil and fertilizer applications. Agriculture has come a long way since the implementation of federal restrictions on the harmful chemicals found in fertilizers: the strongest alternative of which is organic matter compost. Utilization of compost is generally decided on an individual basis and up to the caretaker of the plantings to find space and materials to cultivate and nourish the compost pile throughout the year to sustain the fertilization of the agricultural plots or yard. Again, federal regulations could aid in the ease of this process as organic compost is immensely beneficial to crops of all kinds and the widespread knowledge of composting could keep tons of organic matter out of landfills. Implementing a program that makes organic compost more accessible to citizens that wish to utilize it in their urban agricultural typologies would prove to be both beneficial to the environment and beneficial to the producers/consumers of agricultural products in the urban and suburban areas of cities.

SPATIAL UTILIZATION:

If a 30'x30' plot can produce enough food for a family to sustain itself throughout the year, then there should be little excuse as to why society is dependent on other producers of goods; on an individual level the space required to sustain a healthy diet would be even more minuscule and manageable – the configuration of space would be more module and adaptable into different living arrangements throughout urban and suburban residential infrastructure. Although the climate in the northern Midwest region of the United States is less than accommodating for year round production, technology in food storage is at a level that should allow for individuals or entire families to produce and store enough food to fulfill a good portion of their needs throughout the non-growing seasons as well. Many new technologies are also surfacing and gaining substantial supporting research for indoor production; methods of aquaponics/hydroponics, tiered and container plantings, and greenhouses are among those at the most developed stages.

Simple utilization of common space in the landscape and in the urban core also have a huge potential to bring benefits to the community at large and not just at the individual scale. The CPUL: Continuous Productive Urban Landscape model has been introduced in various cities to show the potential of connecting open green spaces to create corridors for both people and animals as well as ecoregions and then renovated with urban agriculture principles to create productive public spaces that are owned by the community as a whole (Bohn & Viljoen 2011). Various case studies out of European nations provide documentation of the reclamation of underutilized vehicular streets in transforming them into medium scale urban agricultural plots that the community at large is in charge of maintaining and benefiting from.

Another case of inventive special planning is the Vancouver, BC, Canada metropolitan area. Smith's article for The British Colombia Farmland Preservation Program that oversees the preservation of a Land Commission Act passed in 1973 delineates areas of the urban core and suburban sprawl labeled as Agricultural Land Reserve (2012). These areas remain void of urban buildings and serve as the urban/agricultural edge of the city in order to promote localized agricultural production. The reserve land

is not simply a buffer around the urban core according to Smith; the ALR boundaries jut in and out, around and through the city to create a seamless network of urban and agricultural spaces – yet both typologies have their designated place (2012).

COMMUNITY BUILDING:

Community garden plots as well as joint effort/joint benefit urban agricultural plots easily foster a sense of community and the building of community ties and relationships. Naturally, as people invest into their community they feel ownership of the place and in turn feel more invested in the outcomes of people, projects, and day to day activities in the area. To reference the research of Ober Allen, Alaimo, Elam & Perry again, the youth in the neighborhoods around Flint, Michigan who were involved in caring for the community garden plots and after school programs described a gain of increased sense of ownership and became more invested in the future of the community (2008). That being said, the adults that aided in facilitating these programs or worked adjacent to the community garden plot programs in the Flint neighborhoods stated how they felt more of a sense of responsibility to keep the neighborhood in order and a more receptive youth population to the requests of their elders in what used to be a disadvantaged and slightly crime ridden area (Ober Allen, Alaimo, Elam & Perry 2008).

CONCLUSION:

It seems so obvious of an answer, with all the benefits that each of these typologies elicits, that utilizing these ideas in urban landscapes can further benefit its citizens and the environment, therefore, the next step is to ask why the implementation of such typologies has yet to become widespread. In a society full of hustle and bustle, tasks run on instantaneous gratification. Society hinges on the facetious notion that waiting isn't worth it – the society of satisficing; choosing the best available solution at hand. Hence, when challenged with the idea of producing food sustainably per capita in smaller scale typologies that require more focused attention and sacrifices of time, society chooses to turn away and deem that task much more suitable for the current industrialized farming methodology.

Each of the typologies stated at the beginning of the paper under the umbrella of urban

agricultural techniques: Urban gardens, urban agriculture, edible landscapes, community garden plots, and agriscaping have immense benefits that are produced through the utilization of the techniques. Although each is unique, they all have a baseline connection of producing food in an urban or suburban setting without the common industrialization techniques of current rural farming. These typologies require intensive participation of the producers and caretakers with the aim that these individuals are also the consumers that reap the reward of the harvested foods, yet in some cases society asks that the minority sacrifice their time and efforts for the majority to be able to reap the benefits of the labor (community garden plots).

Each of these typologies have been introduced and documented in some way, shape, or form, in a place around the globe; furthermore, each of the typologies have results from research that promote the benefits and success of the techniques. Ultimately the conclusion stands that if each typology works separately to some degree they could be layered to produce the same or better benefits for the producers and consumers of the plantings.

Looking for the next step in the process of furthering research of this theory would be to apply and integrate these urban agriculture techniques and typologies in order to elicit the tremendous benefits that are found within personal health, environmental concerns, and community betterment categories. This primary choice of layering the techniques would be beneficial in the planning and reconstruction or rehabilitation of open or underutilized spaces in urban or suburban capacities around the country.

ANNOTATED BIBLIOGRAPHY:

BOHN, K. & VILJOEN, A. (2011).
The source by Bohn and Viljoen is focused solely on defining and analyzing the utilization of Continuous Productive Urban Landscapes (CPULs). The CPULs are explored on multiple levels in multiple locations and tie in a number of case studies to exemplify the argument of utilizing this model of planning and retrofitting urban agriculture into cities.

CONDON, M., MULLINIX, K., FALLICK, A., & HARCOURT, M. (2010).
This source is from credible sources; each of the authors has a high qualification in the related fields. The writers and the content of the published article are from British Colombia, Canada. This source offers a strong case study analysis and somewhat developed guidelines for how the metropolis of Vancouver implemented the ideas of Agricultural Land Reserves. The source provided a good gateway to more exploration of ALR lands and a list of further sources for investigation.

OBER ALLEN, J., ALAIMO, K., ELAM, D., & PERRY, E. (2008).
The research provided by observation, interviews, and qualitative and quantitative data presented in this source is immensely informative and proved to be a guide for building the argument of my thesis. The proof of successful community garden plots in a semi-deteriorating city provided strength to my argument for integrating all sorts of urban agricultural typologies back into the urban core and suburban sprawl areas. This source qualified its information and potential flaws of the research presented which solidifies the credibility of its authors and research strategies.

SMIT, J., & NASR, J. (1992).
This source is a lengthy explanation and analysis of multiple benefits of urban agriculture. It goes into detail about the many facets of each benefit of urban agricultural practices. The most useful section of the paper regards waste and utilization of potential urban wastes. The source justifies any type of urban agricultural techniques that would better utilize open land in the cities and aid in the recycling and reuse of byproducts of urban systems.

SMIT, J., BELLOWS, A. C., & BROWN, K. (2003).
The research presented in this article defines holistic benefits of urban agriculture similar to previous sources I have read, however, detail personal health aspects as well as overviews of environmental benefits of the practices. Aiming to justify the use of urban agricultural typologies goes beyond just the benefits to the city and the environment – this source provided good insight into additional benefits of the users and benefactors of the potential initiatives as well. Possibly one of the least credible of the sources in my list as it is not published in a peer edited journal or on a website, however, it is backed by a foundation that has ties to the implementation of the techniques of my research.

SMITH, B. (2012).
A citation in the journal article by Condon, Mullinix, and Fallick lead me to this source that further defines the Agricultural Land Reserve idea without the case studies and examples. The cut and dry definitions and processes prove useful to intake quality information in a short amount of time and are able to be utilized in my paper for overview understanding and acclimating the reader to the typologies I am citing.

AGRISCAPING CO.
GILBERT, ARIZONA

The focus on utilizing uncommon plants for the same purposes of design - aesthetics - and also being able to benefit from the potential production is very applicable. The process also creates the necessity for the owner/producer to become the user/consumer.

Agriscaping is a thought process and a design process that integrates normal residential landscaping with an agricultural focus. The process strives to promote self sustainability - ideally within a yard for the purpose of feeding the residing family.

figure .06

AGRISCAPING
ELEGANT. EDIBLE. LANDSCAPING.

figure .07


figure .08

GROWING POWER
MILWAUKEE, WISCONSIN

Implemented in 1993 by will allen, the concepts of community gardening, skill building, and self sustainability combine to create the foundation of growing power. The program finds a productive outlet for youth in the community to spend time, learn skills, and give back to their community.

Creating a sense of ownership of the future of the community by having citizens invest into the growth and progress of the community is achieved through the layout of growing power. This concept can be implemented in a number of other applications.


figure .10

figure .09

BELL BOOK & CANDLE
WEST VILLAGE, NEW YORK

Bell Book and Candle implemented a rooftop garden to supply the restaurant with fresh fruits, vegetables, and herbs. The rooftop garden utilizes an aeroponics vertical system to grow a lot of vegetation in a small amount of space.

The example proves sustainable practices as the entire menu is planned around the availability of produce and altered continuously to accommodate seasons. The technologies of aeroponics are also beneficial in utilizing less space and less (no) soil to produce the vegetation.

SITE INVENTORY AND ANALYSIS AND CODES

THE SITE LOCATION: approximately two miles outside of the downtown area of detroit lakes presents opportunities and restrictions.

OPPORTUNITIES: more farmland, more open space, less legal opposition

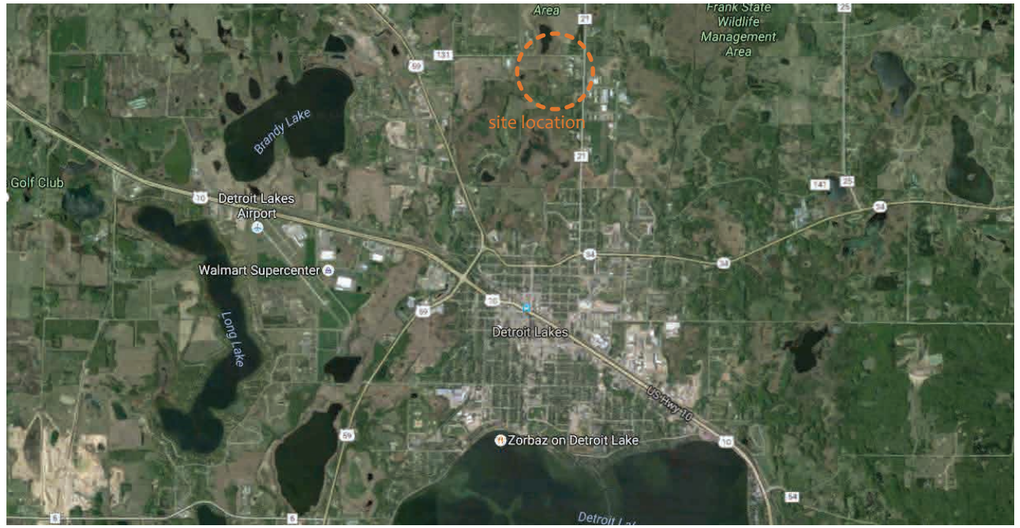
RESTRICTIONS: security issues with neighboring properties, less traffic - who to sell products to, currently zoned for industrial purposes

PLANTING ZONE: 3B-4A limited plant species available: utilization of indoor or transitional planting plans necessary

Current wetland areas on the site provide legal restrictions for where to build as well - setbacks from natural environment lakes is 150'

This greatly reduces developable areas: may need to be creative with utilization of space.

Other factors to keep in mind are the nearby industrial areas, the residential development south west of the site, and the government lands to the north of the site. Each of these different land uses provides opportunities and hinders the design in certain ways as well. My design will need to aim to capitalize on these attributes and utilize them to the best of my abilities.



POTENTIAL PROGRAM

Meeting rooms and educational rooms to facilitate future education of residents

Private residences to actual host residents

Administrative areas to house offices/desks in order to conduct day to day facilitation of the organization

Recreational and shared spaces: dining room, kitchen, common room for interaction between residents

Utility areas for water heaters, storage, electrical switchboards, etc.

Parking primarily for the administration personnel as residents may not have vehicles or for guests/visitors

Renewable resources like solar energy and wind energy enable cost savings and sustainability

Permaculture zone 0 – herb gardens, kitchen gardens, every day need for attending

Permaculture zone 1 – secondary necessity plants

Permaculture zone 2 – bi-weekly attending needs

Permaculture zone 4 – plants such as edible forests, nut producing trees, self-sustaining plants

Storage areas for tools and equipment

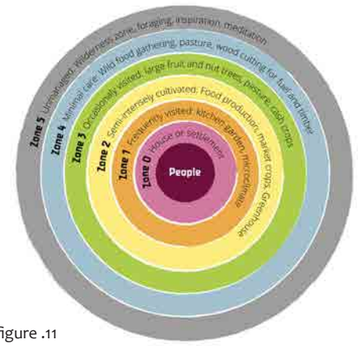


figure .11

Administrative areas for retail opportunity to better organize and facilitate the ongoings of the business

Public areas of retail for the actual interaction of the residents (workers) and the public
Parking areas so that people who drive to visit the retail opportunities have a place to park their cars

Utility areas of retails such as a kitchen, public bathroom, etc

Wetland conservation to keep with EPA laws and maintain the integrity of the land

Trails/trail system to enable residents to traverse the entirety of the land – not just the parts they live on

Healing garden to promote self reflection and overcoming various obstacles (mental, physical, emotional, addiction)

Spiritual garden to promote both self and community based education, worship, and growth through prayer

Aesthetic plantings simply for beautifying the area to make the residents feel at home and welcome visitors

Drainage and water retention to adhere to laws regarding sustainability and stormwater management

FUNCTION:

The Refuge House has a necessity for residence space in order to achieve their primary purpose of providing housing to those who are struggling with overcoming various difficulties in life. With the nature of the residents there is a need for security and administrative spaces as well. Faith and spiritual guidance is a pedestal of the Refuge House and dictates a lot of the processes and programs that the organization sets up to involve the residents in. A secondary premise of the Refuge House organization also details providing the residents with opportunities to learn and better equip themselves for self-sufficiency; programmatic elements of agricultural land to farm and harvest from, a restaurant open to the public, and relationships with local educational institutions to provide in-house learning opportunities were all described by the client as potentially beneficial.

FORM:

Forms of spaces initially will be dictated by the land and the legal restrictions for development on the given land – there are setbacks for development within a buffer zone of the current wetlands. Additionally, the form of program elements such as the residence building will depend on the initial funds

available for construction as well as the desired amount of residents in the new building. The Refuge House currently houses around 20 residents (including dependents), however, with this opportunity of expansion the organization would strive to double or triple the amount of residents. Making decisions on the format and relationship between program elements will focus on the goals and pedestals of the organization – eg. The administration spaces that correlate with the on-goings of the organization realistically could be constructed separately from the actual residence spaces, yet the goals of the organization would suggest that for security reasons the administration areas should be included in near proximity to the residents in their individual residences and the shared recreational spaces.

ECONOMY:

The cost of housing residents that are not paying for their rooms provides an issue of sustaining the organization. The Refuge House is listed as a non-profit organization and strives to gain donations from the community and government agencies to help support their efforts. Some program elements would allow for The Refuge House to cut costs and additionally make some money that could help support other program elements – eg. If the residents are learning how to farm and maintain some small scale agriculture, harvesting the produce from that planting would allow for cost savings over buying produce from the grocery store; those savings can go towards funding educational programs to help residents earn their GEDs or secondary educational courses as well.

The gift of land comes with many opportunities, yet, a large number of challenges as well due to paying for the property taxes associated with having the ability to develop and live on the land. Tax breaks for sustainable development should be explored to enable The Refuge House to develop the land in a cost efficient way. Utilizing smart living strategies such as graywater reuse, rainwater harvesting, solar power, wind power, passive house designs, etc. Are a great way to possibly earn tax credits, yet in nature are cost saving practices.

figure .12

figure .13

figure .14

TIME:

Timeline for projects and development of program elements will mostly be dictated by the availability of funds. The organization can only develop as fast as they have the money to. With a lack of disposable money and no trustworthy income at the moment will make cause for prioritizing program elements and developing a phasing plan. Program elements such as residences, administration areas, and the agricultural layout of zones are within the first phase of priorities as they have the most necessity for the organization to achieve its goals. Ancillary ideas that would support the goals of the organization further in the future like the development of a public restaurant that would utilize some of the produce grown on site and give the residents the opportunity to learn real world applicable skill sets might be a secondary phase element that can be implemented as time, interest, and money become more available.

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ADDITIONAL SITE PHOTOS FOR REFERENCE

IMAGE REFERENCES:

IMAGE .01
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IMAGE .02
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IMAGE .03
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IMAGE .04
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IMAGE .05
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IMAGE .06
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IMAGE .07
https://agriscaping.com/
IMAGE .08
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IMAGE .09
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IMAGE .10
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IMAGE .11
https://s-media-cache-ak0.pinimg.com/originals/37/21/5d/37215dd1417f735ef3e4a1e82c50231f.jpg
IMAGE .12
http://tinyfrugal.com/farming/debunking-myths-is-urban-farming-only-for-super-rich/
IMAGE .13
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THE REFUGE

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